

STAINLESS STEEL 316LS



SS 316LS (UNS S31673)

SS 316LS is a low carbon, high nickel and molybdenum version of type 316 stainless steel approved for medical implant applications. The alloy is manufactured with higher nickel, molybdenum and chromium content than standard type 316L stainless. This balanced chemistry combined with excellent microcleanliness provided by ARC-AOD + ESR melting practice maximizes corrosion resistance and provides a ferrite free microstructure.

GENERAL INFORMATION

The alloy can be formed from the annealed temper by stamping and deep drawing. This alloy cannot be hardened by heat treatment. It must be hardened by cold working. Joining is accomplished by brazing and welding.

AVAILABILITY

SS 316LS is available from Hamilton Precision Metals as strip product from 0.0005" to 0.020" (0.0127mm to 0.508 mm) in widths up to 9.0" (228.6 mm). It is also available in foil as thin as 0.000200" (0.00508 mm) in widths of 4.0" (101.6 mm) maximum. The material conforms to ASTM F139, ISO 5832-1 and UNS S31673.



Technical Data

TYPICAL MECHANICAL PROPERTIES ¹		
	ANNEALED	COLD ROLLED (approx 60%)
Ultimate Tensile Strength	100,000 PSI	175,000 PSI
Yield Strength (0.2% Offset)	55,000 PSI	160,000 PSI
Elongation in 2" *	40%	4.0%
Modulus of Elasticity (Tension)	28 X 10 ⁶ PSI	-
Poisson's Ratio	0.25	-

*The measured elongation will be less as thickness decreases to 0.002" and less.

¹ These values may be adjusted by control of process variables – consult HPM for desired values.

NOMINAL COMPOSITION	
Chromium	18.0%
Nickel	14.0%
Molybdenum	2.6%
Manganese	1.6%
Carbon	0.02%
Iron	Balance

PHYSICAL PROPERTIES ²	
Density	0.287 lbs/cu.in.
Melting Point (Approx.)	1370°C
Electrical Resistivity @ R.T.	74 Microhm · cm
Thermal Expansion Coefficient (0° to 100°C)	16.0 x 10 ⁻⁶ /°C
Thermal Conductivity @ 100°C	16.3 W/m · K
Magnetic Attraction	
Annealed	None
Cold Rolled	None
Magnetic Permeability (Annealed: H = 200 oersteds)	1.02 Max.

² Typical values to guide alloy selection but are not a guarantee of minimum or maximum.